member **34** is inter-digitated as shown; and the overlapping length, L, of the parts **34***a,b* may be prescribed for a desired compression/stretching. More preferably, the parts **34***a,b* are relatively repositionable, and length, L, is adjustable, so as to tune the service life of the member **30** and/or adjust the modification of the surface texture.

[0061] This invention has been described with reference to exemplary embodiments; it will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope thereof. Therefore, it is intended that the invention not be limited to a particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims.

What is claimed is:

1. A system for selectively modifying the texture of an exposed surface, said system comprising:

a foldable structure defining a plurality of folds, wherein each fold further defines a degree of folding, and presents an outermost edge or vertex, and the structure is communicatively coupled to the surface; and

at least one active material element operable to undergo a reversible change in fundamental property when exposed to or occluded from an activation signal, and communicatively coupled to the structure,

said at least one element, and structure being cooperatively configured such that the change causes or enables the degrees of folding, and as a result, the texture of the surface to modify.

2. The system as claimed in claim **1**, wherein a plurality of elements are individually exposable and/or occluded from an activation signal, so as to be separately activated and deactivated respectively, and drivenly coupled to the structure.

3. The system as claimed in claim **1**, wherein the plurality of folds defines a square Miura fold pattern.

4. The system as claimed in claim **1**, wherein the surface is defined by a vehicle, and modifying the texture alters wind drag, radar scatter, veiling glare, or contact surface area.

5. The system as claimed in claim **1**, further comprising;

a controller communicatively coupled to the element, and operable to selectively generate, and terminate the signal; and

a sensor communicatively coupled to the controller and operable to determine and convey information to the controller,

said element, controller, and sensor being cooperatively configured to modify the texture only when information is determined.

6. The system as claimed in claim **1**, wherein the structure includes a metallic outer layer and polymeric core.

7. The system as claimed in claim **1**, wherein the structure is formed of shape memory polymer.

8. The system as claimed in claim **7**, wherein the structure is caused to store energy, and the change enables the structure to release the energy.

9. The system as claimed in claim **7**, wherein the structure further includes a plurality of interiorly disposed heating elements.

10. The system as claimed in claim **1**, wherein said at least one element is an actuator drivenly coupled to the structure.

11. The system as claimed in claim **10**, wherein the active material is selected from the group consisting essentially of shape memory alloy, shape memory polymer, piezoelectric composites, magnetostrictive material, electrostrictive material, dielectric elastomer, and electroactive polymer.

12. The system as claimed in claim **10**, wherein at least a portion of the actuators are passively actuated.

13. The system as claimed in claim **10**, wherein the structure defines a median plane, and a plurality of actuators is individually connected to and traversely engage each fold.

14. The system as claimed in claim **10**, wherein the actuator includes a sheet disposed beneath the structure.

15. The system as claimed in claim **10**, further comprising:

first and second opposite end caps fixedly secured to and adjacent the structure,

said actuator being drivenly coupled to at least one end cap.

16. The system as claimed in claim **10**, further comprising:

an elastic substrate fixedly adhered to the structure.

17. The system as claimed in claim **16**, wherein the actuator is embedded within and traverses the substrate, and configured to stretch or compress the substrate.

18. The system as claimed in claim **10**, wherein the structure is shiftable between flattened and folded conditions, and the change causes the structure to shift to one of the conditions, said system further comprising:

a return mechanism drivenly coupled to the structure antagonistic to the actuator, and operable to reverse the modification and cause the structure to shift to the other of the conditions.

19. The system as claimed in claim **18**, wherein the return mechanism is a compression spring coaxially aligned with the actuator.

20. A system for selectively modifying the texture of an exposed surface, said system comprising:

a foldable structure defining a plurality of folds, wherein each fold further defines a degree of folding, and presents an outermost edge or vertex, the structure is communicatively coupled to the surface, and formed at least in part by an active material element operable to undergo a reversible change in fundamental property when exposed to or occluded from an activation signal, and the active material element is operable to selectively enable or promote folding; and

an active material actuator operable to undergo a second reversible change in fundamental property when exposed to or occluded from an activation signal, and drivenly coupled to the structure

said structure, active material element, and active material actuator being cooperatively configured such that the first and second changes cooperate to cause the degrees of folding, and as a result, the texture of the surface, to modify.

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